

**APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES
DIVISION A4.6 – TIER I AND TIER 2**

SECTION A4.601 GENERAL

A4.601.1 Scope. The measures contained in this appendix are not mandatory unless adopted by a city, county, or city and county as specified in Section 101.7. The provisions of this section outline means of achieving enhanced construction or reach levels by incorporating additional green building measures. In order to meet one of the tier levels designers, builders, or property owners are required to incorporate additional green building measures necessary to meet the threshold of each level.

A4.601.2 Prerequisite measures. Tier 1 and Tier 2 thresholds require compliance with the mandatory provisions of this code and incorporation of the required prerequisite measures listed in Section A4.601.4.2 for Tier 1 and A4.601.5.2 for Tier 2. Prerequisite measures are also identified in the Residential Application Checklist in Section A4.602.

As specified in Section 101.7, additional prerequisite measures may be included by the enforcing agency to address specific local environmental conditions and may be listed in the Innovative Concepts and Local Environmental Conditions portions of the checklist.

A4.601.3 Elective measures. In addition to the required measures, Tier 1 and Tier 2 buildings must incorporate at least the number of elective measures specified in Sections A4.601.4.2 and A4.601.5.2.

TIER 1 REQUIREMENTS

A4.601.4 Tier 1. To achieve Tier 1 status a project must comply with the following:

A4.601.4.1 Mandatory measures for Tier 1. The project shall meet or exceed all of the mandatory measures in Chapter 4, Divisions 4.1 through 4.5 and Chapter 7 as applicable.

A4.601.4.2 Prerequisite and elective measures for Tier 1. In addition to the mandatory measures, compliance with the following prerequisite and elective measures from Appendix A4 is also required to achieve Tier 1 status:

1. From Division A4.1, Planning and Design.
 - 1.1 Comply with the topsoil protection requirements in Section A4.106.2.3.
 - 1.2 Comply with the 20 percent permeable paving requirements in Section A4.106.4.
 - 1.3 Comply with the cool roof requirements in Section A4.106.5.
 - 1.4 Comply with at least two elective measures selected from Division A4.1.
2. From Division A4.2, Energy Efficiency.
 - 1.1 Exceed the *California Energy Code* requirements, based on the 2008 Energy Efficiency Standards by 15 percent.
 - 1.2 Comply with at least four elective measures selected from Division A4.2.
3. From Division A4.3, Water Efficiency and Conservation.
 - 1.1 Comply with the reduced flow rate for kitchen sink faucets in Section A4.303.1
 - 1.2 Comply with the Tier 1 potable water use reduction for landscape irrigation design in Section A4.304.4.
 - 1.3 Comply with at least one elective measure selected from Division A4.3.
4. From Division A4.4, Material Conservation and Resource Efficiency.
 - 1.1 Comply with the 20 percent cement reduction requirements in Section A4.403.2.
 - 1.2 Comply with the 10 percent recycled content requirements in Section A4.405.3.
 - 1.3 Comply with the 65 percent reduction in construction waste in Section A4.408.1.
 - 1.4 Comply with at least two elective measures selected from Division A4.4.
5. From Division A4.5, Environmental Quality.
 - 1.1 Comply with the 80 percent resilient flooring systems requirements in Section A4.504.2.
 - 1.2 Comply with the thermal insulation requirements for Tier 1 in Section A4.504.3.
 - 1.3 Comply with at least one elective measure selected from Division A4.3.

Note: The Residential Occupancies Application Checklist contained in Section A4.602 may be used to show which elective measures are selected.

TIER 2 REQUIREMENTS

A4.601.5 Tier 2. To achieve Tier 2 status a project must comply with the following:

Note: The measures necessary to achieve Tier 2 status are very stringent. Cities, counties and cities and counties considering adoption of Tier 2 as mandatory should carefully consider the stringency of each measure and ensure that the measures are achievable in their location.

A4.601.5.1 Mandatory measures for Tier 2. The project shall meet or exceed all of the mandatory measures in Chapter 4, Divisions 4.1 through 4.5 and Chapter 7 as applicable.

A4.601.5.2 Prerequisite and elective measures for Tier 2. In addition to the mandatory measures, compliance with the following prerequisite and elective measures from Appendix A4 is also required to achieve Tier 2 status.

1. From Division A4.1, Planning and Design.
 - 1.1 Comply with the topsoil protection requirements for Tier 1 and Tier 2 in Section A4.106.2.3.
 - 1.2 Comply with the 30 percent permeable paving requirements in Section A4.106.4.
 - 1.3 Comply with the cool roof requirements in Section A4.106.5.
 - 1.4 Comply with at least four elective measures selected from Division A4.1.
2. From Division A4.2, Energy Efficiency.
 - 1.1 Exceed the *California Energy Code* requirements, based on the 2008 Energy Efficiency Standards by 30 percent.
 - 1.2 Comply with at least six elective measures selected from Division A4.2.
3. From Division A4.3, Water Efficiency and Conservation.
 - 1.1 Comply with the Tier 1 reduced flow rate for kitchen sink faucets in Section A4.303.1.
 - 1.2 Comply with the Tier 2 dishwasher requirements in Section A4.303.1.
 - 1.3 Comply with the Tier 2 potable water use reduction for landscape irrigation design in Section A4.304.4.
 - 1.4 Comply with at least two elective measures selected from Division A4.3.
4. From Division A4.4, Material Conservation and Resource Efficiency.
 - 1.1 Comply with the 25 percent cement reduction requirements in Section A4.403.2.
 - 1.2 Comply with the 15 percent recycled content requirements in Section A4.405.3.
 - 1.3 Comply with the 75 percent reduction in construction waste in Section A4.408.1.
 - 1.4 Comply with at least four elective measures selected from Division A4.4.
5. From Division A4.5, Environmental Quality.
 - 1.1 Comply with the 90 percent resilient flooring systems requirements in Section A4.504.2.
 - 1.2 Comply with the thermal insulation requirements for Tier 1 and Tier 2 in Section A4.504.3.
 - 1.3 Comply with at least one elective measure selected from Division A4.3.

Note: The Residential Occupancies Application Checklist contained in Section A4.602 may be used to show which elective measures are selected.

**SECTION A4.602
RESIDENTIAL OCCUPANCIES
APPLICATION CHECKLIST**

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> All
PLANNING AND DESIGN						
Site Selection						
A4.103.1 A site which complies with at least one of the following characteristics is selected: 1. An infill site is selected. 2. A greyfield site is selected. 3. An EPA-recognized Brownfield site is selected.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Site Preservation						
A4.104.1 An individual with oversight responsibility for the project has participated in an educational program promoting environmentally friendly design or development and has provided training or instruction to appropriate entities.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deconstruction and Reuse of Existing Materials						
A4.105.2 Existing buildings are disassembled for reuse or recycling of building materials. The proposed structure utilizes at least one of the following materials which can be easily reused: 1. Light fixtures 2. Plumbing fixtures 3. Doors and trim 4. Masonry 5. Electrical devices 6. Appliances 7. Foundations or portions of foundations		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Site Development						
4.106.2 A plan is developed and implemented to manage storm water drainage during construction.	<input checked="" type="checkbox"/>					
4.106.3 The site shall be planned and developed to keep surface water away from buildings. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows.	<input checked="" type="checkbox"/>					
A4.106.1 Orient buildings to optimize the use of solar energy with the long side of the house oriented within 30° of south.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> All
A4.106.2.1 Soil analysis is performed by a licensed design professional and the findings utilized in the structural design of the building.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.106.2.2 Soil disturbance and erosion are minimized by at least one of the following: <ol style="list-style-type: none"> 1. Natural drainage patterns are evaluated and erosion controls are implemented to minimize erosion during construction and after occupancy. 2. Site access is accomplished by minimizing the amount of cut and fill needed to install access roads and driveways. 3. Underground construction activities are coordinated to utilize the same trench, minimize the amount of time the disturbed soil is exposed and the soil is replaced using accepted compaction methods. 		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
A4.106.2.3 Topsoil shall be protected or saved for reuse as specified in this section. Tier 1. Displaced topsoil shall be stockpiled for reuse in a designated area and covered or protected from erosion. Tier 2. The construction area shall be identified and delineated by fencing or flagging to limit construction activity to the construction area.		<input checked="" type="checkbox"/> ²	<input checked="" type="checkbox"/> ² <input checked="" type="checkbox"/> ²	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.106.3 Postconstruction landscape designs accomplish one or more of the following: <ol style="list-style-type: none"> 1. Areas disrupted during construction are restored to be consistent with native vegetation species and patterns. 2. Limit turf areas to the greatest extent possible. <ol style="list-style-type: none"> a. Not more than 50 percent for Tier 1. b. Not more than 25 percent for Tier 2. 3. Utilize at least 75 percent native Californian or drought tolerant plant and tree species appropriate for the climate zone region. 4. Hydrozoning irrigation techniques are incorporated into the landscape design. 		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> All
A4.106.4 Permeable paving is utilized for the parking, walking, or patio surfaces in compliance with the following. Tier 1. Not less than 20 percent of the total parking, walking, or patio surfaces shall be permeable. Tier 2. Not less than 30 percent of the total parking, walking, or patio surfaces shall be permeable.		<input checked="" type="checkbox"/> ²	<input checked="" type="checkbox"/> ²	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
A4.106.5 Roofing materials shall have a minimum 3-year aged solar reflectance and thermal emittance or a minimum aged Solar Reflectance Index (SRI) equal to or greater than the values specified in Tables A4.106.5(1) and A4.106.5(2). Tier 1 roof covering shall meet or exceed the values contained in Table A4.106.5(1). Tier 2 roof covering shall meet or exceed the values contained in Table A4.106.5(2).		<input checked="" type="checkbox"/> ²	<input checked="" type="checkbox"/> ²			
Innovative Concepts and Local Environmental Conditions						
A4.107.1 Items in this section are necessary to address innovative concepts or local environmental conditions.						
Item 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ENERGY EFFICIENCY						
General						
4.201.1 Low-rise residential buildings shall meet or exceed the minimum standard design required by the California Energy Standards.	<input checked="" type="checkbox"/>					
Performance Approach						
A4.203.1 Exceed the <i>California Energy Code</i> requirements, based on the 2008 Energy Efficiency Standards requirements by 15 percent.		<input checked="" type="checkbox"/> ²				

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> All
A4.203.1 Exceed the <i>California Energy Code</i> requirements, based on the 2008 Energy Efficiency Standards requirements by 30 percent.			<input checked="" type="checkbox"/> ²			
Prescriptive Approach						
Building Envelope						
A4.205.1 Radiant roof barrier is installed in Climate Zones 2, 4, and 8 through 15.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.205.2 Exterior shading at least 18 inches in depth is provided on south and west windows.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Sealing Package						
A.4.206.1 Third party blower door test is conducted and passed to verify building envelope tightness.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HVAC Design, Equipment and Installation						
A4.207.1 Radiant, hydronic, ground source and other innovative space heating and cooling systems included in the proposed design shall be designed using generally accepted industry-approved guidelines and design criteria.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.207.2.2 An HVAC system commissioning plan is developed and the following items, as appropriate, pertaining to the heating and cooling systems are inspected and certified by an independent third party agency: <ol style="list-style-type: none"> 1. Verify compliance with the manufacturers' recommended start-up procedures. 2. Verify refrigerant charge by super-heat or other methods specified by the manufacturer. 3. Burner is set to fire at the nameplate input rating. 4. Temperature drop across the evaporator is within the manufacturers' recommended range. 5. Test and verify air flow to be within 10 percent of the initial design air flow. 6. Static pressure within the duct system is within the manufacturers' acceptable range. 7. Verify that the whole house and exhaust ventilation systems meet Title 24 requirements. 8. Verify that the recommended maintenance procedures and schedules are documented 		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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	Mandatory	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> All
and provided to the home owner.						
A4.207.2.3 Results of the commissioning inspection shall be included in the Operation and Maintenance Manual required in Section 4.410.1.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.207.4 Install gas-fired (natural or propane) space heating equipment with an Annual Fuel Utilization Ratio (AFUE) of .90 or higher.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.207.5 If an electric heat pump must be used, select equipment with a Heating Seasonal Performance Factor (HSPF) of 8.0 or higher.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.207.6 When climatic conditions necessitate the installation of cooling equipment, select cooling equipment with a Seasonal Energy Efficiency Ratio (SEER) higher than 13.0 and an Energy Efficiency Ratio (EER) of at least 11.5.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.207.7 Install ductwork to comply with at least one of the following: <ol style="list-style-type: none"> 1. Install ducts within the conditioned envelope of the building. 2. Install ducts in an underfloor crawl space. 3. Use ducts with an R-6 insulation value or higher. 4. Install ductwork which is buried in the ceiling insulation. 		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
A4.207.8 Perform duct leakage testing to verify a total leakage rate of less than 6 percent of the total fan flow.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.207.9 In Climate Zones 2, 4, and 8 through 15 install a whole-house fan with insulated		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> All
louvers or an insulated cover.						
A4.207.10 ENERGY STAR ceiling fans are installed in all bedrooms and living areas.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Heating Design, Equipment and Installation						
A4.208.1 The Energy Factor (EF) for a gas-fired storage water heater is higher than .60.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.208.2 The Energy Factor (EF) for a gas-fired tankless water heater is .80 or higher.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.208.3 Where the hot water source is more than 10 feet from a fixture, the potable water distribution system shall convey hot water using a method designed to minimize wait time for hot water to arrive at the fixture.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lighting						
A4.209.1 Building lighting consists of at least 90 percent ENERGY STAR qualified hard-wired fixtures.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Appliances						
A4.210.1 Each appliance provided by the builder meets ENERGY STAR if an ENERGY STAR designation is applicable for that appliance.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Renewable Energy						
<p>A4.211.1 Install a solar photovoltaic (PV) system in compliance with the California Energy Commission New Solar Homes Partnership (NSHP).^{1,2} Install energy efficiency measures meeting either Tier I or Tier II below.</p> <p>Tier 1. Exceed the <i>California Energy Code</i> requirements, based on the 2008 Energy Efficiency Standards requirements by 15 percent.</p> <p>Tier 2. Exceed the <i>California Energy Code</i> requirements, based on the 2008 Energy Efficiency Standards requirements by 30 percent.</p> <p>Solar water heating may be used to assist in meeting the energy efficiency requirements of either Tier I or</p>		<input type="checkbox"/>	<input type="checkbox"/>			<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> All
Tier II. 1. In addition, for either Tier I or II, each appliance provided by the builder must be Energy Star if an Energy Star designation is applicable for that appliance. 2. Information on NSHP incentives available through the California Energy Commission may be obtained at the "Go Solar California" website: www.GoSolarCalifornia.ca.gov/nshp/index.html .						
A4.211.2 A solar water heating system is installed.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.211.3 Space on the roof surface and penetrations through the roof surface are provided for future solar installation.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.211.4 A minimum one-inch conduit is provided from the electrical service equipment for the future installation of a photovoltaic (PV) system.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Elevators, Escalators and Other Equipment						
Innovative Concepts and Local Environmental Conditions						
A4.213.1 Items in this section are necessary to address innovative concepts or local environmental conditions.						
Item 1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item 2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item 3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WATER EFFICIENCY AND CONSERVATION						
Indoor Water Use						

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> All
4.303.1 Indoor water use shall be reduced by at least 20 percent using one of the following methods. 1. Water saving fixtures or flow restrictors shall be used. 2. A 20 percent reduction in baseline water use shall be demonstrated.	<input checked="" type="checkbox"/> 7/01/2011			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.403.2 When using the calculation method specified in Section 4.303.1, multiple showerheads shall not exceed maximum flow rates.	<input checked="" type="checkbox"/> 7/01/2011			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.303.3 Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with specified performance requirements.	<input checked="" type="checkbox"/> 7/01/2011			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.303.1 Kitchen faucets and dishwashers shall comply with this section. Tier 1. The maximum flow rate at a kitchen sink faucet shall not be greater than 1.5 gallons per minute at 60 psi. Tier 2. In addition to the kitchen faucet requirements for Tier 1, dishwashers in Tier 2 building shall be ENERGY STAR qualified and not use more than 5.8 gallons of water per cycle.		<input checked="" type="checkbox"/> ²	<input checked="" type="checkbox"/> ² <input checked="" type="checkbox"/> ²	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.303.2 Nonwater supplied urinals or waterless toilets are installed.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outdoor Water Use						
4.304.1 Automatic irrigation systems installed at the time of final inspection shall be weather-based.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.304.1 Install a low-water consumption irrigation system which minimizes the use of spray type heads.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.304.2 A rainwater capture, storage and re-use system is designed and installed.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.304.3 A water budget shall be developed for		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives ¹		Enforcing Agency <input type="checkbox"/> All	Installer or Designer <input type="checkbox"/> All	Third party <input type="checkbox"/> All
		Tier 1	Tier 2			
landscape irrigation.						
A4.304.4 Provide water efficient landscape irrigation design that reduces the use of potable water. Tier 1. Does not exceed 65 percent of ETo times the landscape area. Tier 2. Does not exceed 60 percent of ETo times the landscape area.		<input checked="" type="checkbox"/> ²	<input checked="" type="checkbox"/> ²	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.3.4.5 A landscape design is installed which does not utilize potable water.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WATER REUSE SYTEMS						
A4.305.1 Piping is installed to permit future use of a graywater irrigation system served by the clothes washer or other fixtures.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.305.2 Recycled water piping is installed.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.305.3 Recycled water is used for landscape irrigation.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Innovative Concepts and Local Environmental Conditions						
A4.306.1 Items in this section are necessary to address innovative concepts or local environmental conditions.						
Item 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MATERIAL CONSERVATION AND RESOURCE EFFICIENCY						
Foundation Systems						
A4.403.1 A Frost-Protected Shallow Foundation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> All
(FPSF) is designed and constructed.						
A4.403.2 Cement use in foundation mix design is reduced. Tier 1. Not less than a 20 percent reduction in cement use. Tier 2. Not less than a 25 percent reduction in cement use.		<input checked="" type="checkbox"/> ²	<input checked="" type="checkbox"/> ²	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Efficient Framing Techniques						
A4.404.1 Beams and headers and trimmers are the minimum size to adequately support the load.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.404.2 Building dimensions and layouts are designed to minimize waste.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.404.3 Use pre-manufactured building systems to eliminate solid sawn lumber whenever possible.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.404.4 Material lists are included in the plans which specify material quantity and provide direction for on-site cuts.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Material Sources						
A4.405.1 One or more of the following building materials, that do not require additional resources for finishing are used: 1. Exterior trim not requiring paint or stain. 2. Windows not requiring paint or stain. 3. Siding or exterior wall coverings which do not require paint or stain.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.405.2 Floors that do not require additional coverings are used including but not limited to stained, natural, or stamped concrete floors.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.405.3 Post-consumer or pre-consumer recycled content value (RCV) materials are used on the project. Tier 1. Not less than a 10 percent recycled content value.		<input checked="" type="checkbox"/> ²		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> All
Tier 2. Not less than a 15 percent recycled content value.			<input checked="" type="checkbox"/> ²			
A4.405.4 Renewable source building products are used.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enhanced Durability and Reduced Maintenance						
4.406.1 Joints and openings. Annular spaces around pipes, electric cables, conduits, or other openings in plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or similar method acceptable to the enforcing agency.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Resistance and Moisture Management						
A4.407.1 Install foundation and landscape drains.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.407.2 Install gutter and downspout systems to route water at least 5 feet away from the foundation or connect to landscape drains which discharge to a dry well, sump, bioswale, rainwater capture system or other approved on-site location.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.407.3 Provide flashing details on the building plans and comply with accepted industry standards or manufacturers instructions.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.407.4 Protect building materials delivered to the construction site from rain and other sources of moisture.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.407.5 In Climate Zone 16 an ice/water barrier is installed at roof valleys, eaves and wall to roof intersections.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.407.6 Exterior doors to the dwelling are protected to prevent water intrusion.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.407.7 A permanent overhang or awning at least 2 feet in depth is provided.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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	Mandatory	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> All
Construction Waste Reduction, Disposal and Recycling						
4.408.1 A minimum of 50 percent of the construction waste generated at the site is diverted to recycle or salvage.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.408.2 Where a local jurisdiction does not have a construction and demolition waste management ordinance, a construction waste management plan shall be submitted for approval to the enforcing agency.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.408.1 Construction waste generated at the site is diverted to recycle or salvage in compliance with one of the following: 1. Tier 1 at least a 65 percent reduction 2. Tier 2 at least a 75 percent reduction Exception: Equivalent waste reduction methods are developed by working with local agencies.		<input checked="" type="checkbox"/> ²	<input checked="" type="checkbox"/> ²	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
Building Maintenance and Operation						
4.410.1 An operation and maintenance manual shall be provided to the building occupant or owner.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Innovative Concepts and Local Environmental Conditions						
A4.411.1 Items in this section are necessary to address innovative concepts or local environmental conditions.						
Item 1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item 3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ENVIRONMENTAL QUALITY						
Fireplaces						

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> All
4.503.1 Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with US EPA Phase II emission limits where applicable. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pollutant Control						
4.504.1 Duct openings and other related air distribution component openings shall be covered during construction.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.504.2.1 Adhesives, sealants and caulks shall be compliant with VOC and other toxic compound limits.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.504.2.2 Paints, stains and other coatings shall be compliant with VOC limits.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.504.2.3 Aerosol paints and coatings shall be compliant with product weighted MIR limits for ROC and other toxic compounds.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.504.2.4 Documentation shall be provided to verify that compliant VOC limit finish materials have been used.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.504.3 Carpet and carpet systems shall be compliant with VOC limits.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.504.4 50 percent of floor area receiving resilient flooring, shall comply with the VOC-emission limits defined in the Collaborative for High Performance Schools (CHPS) Low-emitting Materials List or be certified under the Resilient Floor Covering Institute (RFCI) FloorScore program.	<input checked="" type="checkbox"/>					
4.504.5 Particleboard, medium density fiberboard (MDF), and hardwood plywood used in interior finish systems shall comply with low formaldehyde emission standards.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> All
A4.504.1 Meet the formaldehyde limits contained in Table 4.504.5 before the mandatory compliance date, or use composite wood products made with either California Air Resources Board approved no-added formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.504.2 Install VOC compliant resilient flooring systems. Tier 1. At least 80 percent of the resilient flooring installed shall comply. Tier 2. At least 90 percent of the resilient flooring installed shall comply.		<input checked="" type="checkbox"/> ²	<input checked="" type="checkbox"/> ²	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.504.3 Thermal insulation installed in the building shall meet the following requirements: Tier 1. Install thermal insulation in compliance with the VOC-emission limits defined in Collaborative for High Performance Schools (CHPS) Low-emitting Materials List. Tier 2. Install insulation which contains No-Added Formaldehyde (NAF) and is in compliance with the VOC-emission limits defined in Collaborative for High Performance Schools (CHPS) Low-emitting Materials List.		<input checked="" type="checkbox"/> ²	<input checked="" type="checkbox"/> ²	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interior Moisture Control						
4.505.2 Vapor retarder and capillary break is installed at slab on grade foundations.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.505.3 Moisture content of building materials used in wall and floor framing is checked before enclosure.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Indoor Air Quality and Exhaust						
4.506.1 Exhaust fans which terminate outside the building are provided in every bathroom.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.506.1 Higher than MERV 6 filters are installed on central air or ventilation systems.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.506.2 Direct vent appliances are used or isolated from the conditioned space.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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	Mandatory	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> All
Environmental Comfort						
4.507.1 Whole house exhaust fans shall have insulated louvers or covers which close when the fan is off. Covers or louvers shall have a minimum insulation value of R-4.2.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.507.2. Duct systems are sized, designed, and equipment is selected using the following methods: 1. Establish heat loss and heat gain values according to ACCA Manual J or equivalent. 2. Size duct systems according to ACCA 29-D (Manual D) or equivalent. 3. Select heating and cooling equipment according to ACCA 36-S (Manual S) or equivalent.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outdoor Air Quality Reserved						
Innovative Concepts and Local Environmental Conditions						
A4.509.1 Items in this section are necessary to address innovative concepts or local environmental conditions.						
Item 1.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item 2.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item 3.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INSTALLER AND SPECIAL INSPECTOR QUALIFICATIONS						
Qualifications						
702.1 HVAC system installers are trained and certified in the proper installation of HVAC systems.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
702.2 Special inspectors employed by the enforcing agency must be qualified and able to demonstrate competence in the discipline they are inspecting.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Verifications						

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	Mandatory	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> All
703.1 Verification of compliance with this code may include construction documents, plans, specifications builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which show substantial conformance.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1. Green building measures listed in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7.

2. Required prerequisite for this Tier.